

# Implications of nanoparticles functionalization in supramolecular magnetogels for drug delivery

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The solvent pockets of supramolecular hydrogels provide a means to encapsulate composites, besides enabling the efficient loading and transport of drugs. For instance, the combination with magnetic nanoparticles towards magnetic gels enables the real-time remote control of gels' properties. However, little is described about the effect of different nanoparticles functionalization in the assembly of supramolecular gels and how can that be used for co-assembly of both components [1]. In this work, dehydropeptide gels were loaded with citrate- or lipid-stabilized nanoparticles to evaluate the effect over doxorubicin release. Particularly, the lipid-stabilized nanoparticles co-assembled with the hydrogel fibres forming lipid-fibre interface domains (figure 1). Further, the magnetic hyperthermia led to an enhanced release of doxorubicin in both systems, making these strategies promising for the control of drug release.

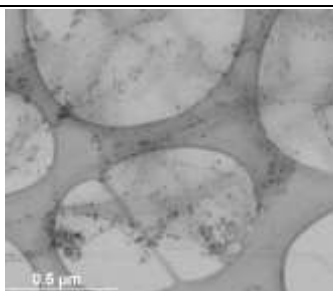


Figure 1: STEM image of the lipid-stabilized nanoparticles adsorbed onto hydrogel fibres [1].

[1] S. Veloso, J. Silva, L. Hilliou, C. Moura, P. Coutinho, J. Martins, M. Testa-Anta, V. Salgueiriño, M. Correa-Duarte, P. Ferreira, E. Castanheira, *Nanomaterials* **2021**, *11*, 16.